

**EPA SLN No. OH080002**

## NOTE TO FILE

date: 3/12/2010  
from: Tom Harris, RD/IRB  
re: history of Treeage SLNs

Treeage is a 4.0% liquid formulation of emamectin benzoate. The product is used straight or mixed with water, poured into commercial tree injection equipment, and injected into trees.

The Sec 3 application for 100-RGNO was received from Syngenta on 12/21/2007 for a general use product to be used on a variety of ornamental trees to control a variety of pests. The product was registered on 7/11/2009 as an RUP for use on ash trees only to control emerald ash borer. A subsequent amendment was approved 11/13/2009 adding a 2-year efficacy claim. A minor amendment was approved 3/24/2010 to remove stray text referring to non-ash sites.

On 3/27/2008 EPA received the first SLN application (WV080002<sup>?</sup>). This was followed over the next year by similar SLNs in IL, IN, KY, MD, MI, MN, MO, OH, PA, VA, and WI. Even though the Sec 3 was not yet registered there was much interest in the product to control Emerald Ash Borer (EAB), an imported pest which had gained quarantine pest status. There were few alternatives (imidacloprid and dinotefuran will also control EAB; see those files for exactly when ~~they~~<sup>each</sup> chemical was registered for this use) and emamectin provided excellent and long lasting control.

To handle this unusual situation (an SLN on a unregistered Sec 3 product) we came up with the following approach. The product container was labeled with a minimal label with basic identification, handling, disposal statements, and a reference to see any applicable state label. There were no application instructions on the product container; instead, the SLN detailed the application instructions. Both container and SLN labels were general use.

When the Sec 3 was finally registered it was as a restricted use pesticide (RUP) due to acute tox to worker (eye II). Application was restricted to ash trees for EAB. Essentially, the accepted Sec 3 label duplicated the SLNs and eliminated the need for separate SLNs. However, Syngenta did not want to go into full scale production until a 2-year efficacy claim was added to the label. They had attempted to include this claim from the beginning but satisfactory efficacy data was not submitted until Fall 2009 with the resulting label approved on 11/13/2009. At this point, Syngenta had what they considered a marketable product but a contract agreement called for the end-use product to be actually marketed by a distributor, Arborjet. Due to contract negotiations and Arborjet's production schedule, final product was not anticipated to be available until summer 2010.

This was presenting a problem since a) some of the SLNs had expired, and b) EPA policy is that an SLN should be cancelled as soon as the use is registered on a Sec 3 product. This was further complicated by the fact that the Sec 3 product is a Restricted Use Pesticide. None of the initial product generic labels nor SLN labels were RUP and in fact some product had been sold to non-certified applicators.

After further discussion between EPA, Syngenta, and the states, Syngenta finally agreed to move up production of the Arborjet product so that it would be available to distributors in Spring 2010. Syngenta also pulled back all unsold product with the generic (no application instruction) labels from dealers. Finally, Syngenta agreed to exchange any product already in the hands of distributors or end-users for new, RUP labeled Sec 3 product. The SLNs were cancelled by Syngenta on 3/12/2010. Some states (eg. WI) have prepared Fact Sheets to communicate the situation to users. While it is possible that some confusion may continue and old product be used (illegally) during 2010, the situation should resolve itself when the limited supply of old product already in the user's hands is used up and the new Sec 3 RUP Arborjet product is sold.

At this time, Syngenta is pursuing expansion of the label to other trees. The key issue is the effect on pollinators. Given the 2-year efficacy this will be tricky. Studies will need to demonstrate how emamectin distributes in the tree and if pollinators are exposed to a toxic dose.



**Treeage - emamectin, tree injection for Emerald Ash Borer**  
**Sec 3 (100-1309) registered 7/11/2009**

**Summary Report**

expiration date

Registration #	Name	Status	Restricted Use Product	Company #	Company Name	Percent Active Ingredient	Active Ingredient
IL080001	TREEAGE-AGE	Under Review (16-Apr-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 expires 4/15/2013	emamectin benzoate
IN080001	TREE-AGE	Under Review (25-Mar-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 no expiration given	emamectin benzoate
KY090029	TREE-AGE	Under Review (09-Jun-2009)	N	100	SYNGENTA CROP PROTECTION, INC.	4 expired 12/31/09	emamectin benzoate
MD090001	TREE-AGE	Under Review (26-Feb-2009)	N	100	SYNGENTA CROP PROTECTION, INC.	4 expired 12/31/09	emamectin benzoate
MI080001	TREE-AGE	Under Review (28-Mar-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 expires 12/31/14	emamectin benzoate
MN080009	TREE-AGE	Under Review (03-Jul-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 no expiration given	emamectin benzoate
MO080006	TREE-AGE	Under Review (21-Nov-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 no expiration given	emamectin benzoate
OH080002	TREE-AGE	Under Review (25-Mar-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 no expiration given	emamectin benzoate
PA090001	TREE-AGE	Under Review (02-Jan-2009)	N	100	SYNGENTA CROP PROTECTION, INC.	4 expires 12/31/2014	emamectin benzoate
VA080008	TREEAGE-AGE	Under Review (18-Nov-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4 expires 12/31/10 ?	emamectin benzoate

OPPIN Query 3/9/2010, expirations edited 3/11/10

WI080005	TREE-AGE	Under Review (18-Nov-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4	expired 12/31/09	tin benzoate
WV080002	TREE-AGE	Under Review (28-Mar-2008)	N	100	SYNGENTA CROP PROTECTION, INC.	4	expires 12/31/10 ?	tin benzoate

OPPIN Query 3/9/2010, expirations edited 3/11/10





State Regulatory Affairs  
410 Swing Road  
Greensboro, NC 27419

Telephone: (336) 632 2146  
Fax: (336) 632 2884

March 12, 2010

Mr. Bill Goodman  
Ohio Department of Agriculture  
Pesticide Regulation Section  
Plant Industry Division  
8995 East Main Street  
Reynoldsburg, Ohio 43068

<p>SUBJECT: TREE-äge™ (EPA Reg. No. 100-1309) EPA SLN No. OH-080002 Cancellation of Section 24(c) Active Ingredient: Enamectin Benzoate</p>
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Dear Mr. Goodman:

Syngenta Crop Protection is requesting immediate cancellation of the subject Section 24(c).

If you have any questions, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Larry Zang".

Larry Zang  
Senior Regulatory Manager

## EFFICACY REVIEW

**PRODUCT:** Tree-Age (100-RGNO)

**24(c) NUMBER:** WV-080002  
OH-080002

**DATE:** April 18, 2008

**GLP:** N/A

**BARCODE:** D351729 (WV)  
D351728 (OH)

**DECISION:** 391842 (WV)  
391838 (OH)

**CHEMICAL:** Enamectin benzoate (4%)

**CHEMICAL NUMBER:** 122806

**PURPOSE:** Review data to support the acceptance of two SLN labels  
for the control of emerald ash borers.

**MRIDS:** N/A

**TEAM REVIEWER:** Tom Harris

**EFFICACY REVIEWER:** Kable Bo Davis, M.S., Entomologist



4-18-08

### SECONDARY

**EFFICACY REVIEWER:** Joanne Edwards, M.S., Entomologist

### BACKGROUND:

Tree-Age (File Symbol 100-RGNO) is a pending (PRIA due date: July 9, 2009) injected insecticide intended for the control of various arthropod pests in trees. Both Ohio and West Virginia are requesting the acceptance of 24(c) labels for the control of emerald ash borers.

The application rate ranges from 15-50 ml per tree for trees with a diameter of 4-6 inches to 355-1065 ml per tree for trees with a diameter of 70-72 inches. These rates are identical on both 24(c) labels and are consistent with what is found on the currently pending section 3 label.

### DATA REVIEW:

The following data review is comprised of explanations of materials and methods, and a summation of experimental results containing tables with reformatted data.

## Ohio Efficacy Submission

### ***Michigan State University; 2007-***

The objective of this study was to assess the effectiveness of emamectin benzoate, applied as a trunk injection, for the control of emerald ash borers (*Agrilus planipennis*). The experimental design consisted of establishing three different test sites (25 randomized blocks) containing trees of varying size and growing conditions. Trees were treated with one of six pesticides (see Table 1). There were ~6 to 12 trees per treatment at each test site. Foliage samples were taken in mid June, early July, late July and mid August. All leaves were frozen immediately upon removal.

**Table 1. Pesticides Tested; 2007 Michigan State University**

PRODUCT	A.I.	APPLICATION METHOD	DATE APPLIED	RATE (g a.i./DBH inch)
Control	-	-	-	-
Imicide (10%)	Imidacloprid	Trunk Injection	May 22	0.06
Macho 2F (21.4%)	Imidacloprid	Trunk Spray	May 4	1.70
Macho 2F + Pentra-Bark	Imidacloprid	Trunk Spray	May 4	1.70
Safari (20%)	Dinotefuran	Trunk Spray	May 31	1.70
Safari + Pentra-Bark	Dinotefuran	Trunk Spray	May 31	1.70
Emamectin benzoate	Emamectin benzoate	Trunk Injection	May 22	0.10 for dbh ≤ 6.5" 0.15 for dbh 6.5-10" 0.20 for dbh ≥ 10"

### ***Adult Efficacy-***

To determine adult mortality, bioassays were conducted in mid June, early July and late July. Adult beetles were introduced to cages containing treated leaves (3 beetles per leaf). Observations on mortality were taken daily for four days.

### ***Larval Density-***

To determine larval density, trees from two different sites (49 total trees) were cut down and debarked in late September.

### **Results-**

### ***Adult Efficacy-***

The percent mortality of emerald ash borers exposed to leaves taken from trees treated with emamectin benzoate was 100% in all three bioassay periods. The highest percent mortality of beetles exposed to trees treated with imidacloprid or dinotefuran was 81% and was during the June bioassay.

### ***Larval Density-***

Emamectin benzoate provided >99% control of emerald ash borer larvae, relative to untreated controls. There were no more than 3 live larvae on any of the trees. This is in comparison to the larval densities of 14-75 larvae per m<sup>2</sup> (site 1) and 37-62 larvae per m<sup>2</sup> (site 2) for trees treated with either imidacloprid or dinotefuran.



## West Virginia Efficacy Submission

### ***Michigan State University; 2007 (Adrian, MI)-***

The objective of this study was to assess the effectiveness of a variety of different pesticides for the control of emerald ash borers. The experimental design consisted of treating trees with one of twenty different treatments (plus 1 control). All trees were between 14 and 28 years old and ranged in diameter from 6 to 26 inches (DBH). Each treatment was replicated a total of ten times, with each replicate consisting of an individual tree.

Canopy dieback ratings were taken on July 12, 2007 and were calculated by comparing the canopies with photographs in various stages of decline (0% = healthy; 100% = dead; 5% increments). Between the dates of October 15 and 19, 2007, branches from the upper 1/3 of the tree canopy were removed and examined for new galleries and live larvae.

### **Results-**

**Table 2. Results of Trees Treated with Emamectin Benzoate (Adrian, MI)<sup>1</sup>**

Chemical	Application Type	Rate g ai/DBH inch	Application Date	2007 Dieback	New Galleries (per m <sup>2</sup> )	Larval Count
Emamectin Benzoate (4%)	Trunk Injection (0.4 g ai/dbh inch)	0.4	June 22, 2006	5.5%	2.4	2.4
Control	-	-	-	16%	8.3	6.3

<sup>1</sup> results of remaining treatments not in table

The tree treated with emamectin benzoate had the greatest reduction in dieback (5.5% dieback) due to emerald ash borers as compared to the control (16% dieback). The remaining treatments had 2007 dieback ranging from 9.8% (Merit 75 WP; ImaJet (5%) + Merit 75 WP) to 38.0% (Xytect 75 WSP + Xytect Infusable (5%)).

The tree treated with emamectin benzoate had the second lowest number of new galleries (2.4 per m<sup>2</sup>) as compared to the control (8.3 per m<sup>2</sup>). In addition, an average of 2.4 larvae was found on branches treated with emamectin benzoate as compared to an average of 6.3 larvae found on the control branches.

### ***Michigan State University; 2007 (East Lansing, MI)-***

The objective of this study was to assess the effectiveness of a variety of different pesticides for the control of emerald ash borers. The experimental design consisted of treating trees with one of 23 different treatments (plus 1 control). All trees were between 14 and 28 years old and ranged in diameter from 10 to 24 inches (DBH). Each treatment was replicated a total of ten times, with each replicate consisting of an individual tree. For details on emamectin benzoate treatments see Table 3 below.

Canopy dieback ratings were taken on July 6, 2007 and were calculated by comparing the canopies with photographs in various stages of decline (0% = healthy; 100% = dead; 5% increments). Between the dates of October 8 and 12, 2007, branches

from the upper 1/3 of the tree canopy were removed and examined for new galleries and live larvae.

**Table 3. Details for Emamectin Benzoate Treatments**

	<b>Application Rate</b>	<b>Application Date</b>
<b>Treatment 1</b>	0.4 g ai/dbh inch (1:1 water ratio)	Sept. 27, 2005
<b>Treatment 2</b>	0.4 g ai/dbh inch (1:5 water ratio)	Sept. 28, 2005
<b>Treatment 23</b>	0.1 g ai/dbh inch	May 21, 2007
<b>Treatment 24</b>	0.2 g ai/dbh inch	May 21, 2007

#### Results-

**Table 4. Results of Trees Treated with Emamectin Benzoate (East Lansing, MI)<sup>b</sup>**

	<b>2006 Dieback</b>	<b>2007 Dieback</b>
<b>Treatment 1<sup>a</sup></b>	7.3%	12.9%
<b>Treatment 2<sup>a</sup></b>	12.5%	9.9%
<b>Treatment 23<sup>a</sup></b>	20.3%	17.4%
<b>Treatment 24<sup>a</sup></b>	18.5%	23.1%
<b>Control</b>	16.0%	28.8%

<sup>a</sup> see Table 3

<sup>b</sup> results of remaining treatments not in table

The 2007 diebacks for trees treated with emamectin benzoate 4% ranged from 9.9% (Treatment 2) to 23.1% (Treatment 24) as compared to 28.8% for the untreated control.

**Table 5. Results (2007) of Trees Treated with Emamectin Benzoate (East Lansing, MI)<sup>b</sup>**

	<b>Larval Count</b>	<b>New Galleries (per m<sup>2</sup>)</b>
<b>Treatment 1<sup>a</sup></b>	0.0	0.0
<b>Treatment 23<sup>a</sup></b>	0.0	0.0
<b>Treatment 24<sup>a</sup></b>	0.0	0.6
<b>Control</b>	19.3	19.9

<sup>a</sup> see Table 3

<sup>b</sup> results of remaining treatments not in table

All of the trees treated with emamectin benzoate 4% had the lowest numbers for both larval counts (0.0) and new galleries (0.0-0.6) compared to both the control and all of the other treatments.

## **RECOMMENDATIONS:**

The submitted data support the acceptance of both WV-080002 and OH-080002 labels intended for the control of emerald ash borers in Ash trees (tree injection only). The following recommendation applies:

1. The labels state that the “*recommended rate*” for treatments targeted for emerald ash borers range from low to high, however it doesn’t provide guidance as to when it is appropriate to use the “*low*” or “*high*” rate. This should be explained in more detail.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

March 25, 2008

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Ohio Department of Agriculture  
Plant Industry Div. - Pesticide Reg.  
8995 East Main Street  
Reynoldsburg, OH 43068 P.O. Box 630

ATTN: William B. Goodman, Manager

Dear State Agency:

The Office of Pesticide Programs acknowledges receipt of the Section 24(c) application/notification for OH080002.

The package is being forwarded to the Product Manager for review.

To ensure that the Agency receives proper notification of your 24(c) applications/notifications it is necessary to use the correct mailing address. All new 24(c) applications should be sent to the following:

Document Processing Desk (SLN)  
Office of Pesticide Programs -7504P  
U.S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

If you have any questions concerning the administrative screening of the package please contact the Front End Unit at (703)305-5780.

Sincerely,

A handwritten signature in black ink, appearing to read "Barbara Purner".

Front End Processing Staff  
Information Services Branch  
Information Technology & Resources Management Division

## 24(C) CHECKLIST

STATE: <u>OHIO</u>	SLN NO. <u>OH080002</u>
DATE REGISTERED: <u>03-24-08</u>	90-DAY DATE: <u>06-24-2008</u>
SPECIFIC SPECIAL LOCAL NEED: _____	SITE: _____
_____	PEST/PROBLEM: _____
_____	_____

1. Is the State certified to issue this type of registration? \_\_\_\_\_
2. Was the EPA Application/Notification Form submitted? \_\_\_\_\_
3. Was all the required information included on the form? \_\_\_\_\_
4. Was a confidential formula submitted (for new products)? \_\_\_\_\_
5. Is this registration for a "CHANGED USE PATTERN"? \_\_\_\_\_
6. Has an FR document been prepared for this "CHANGED USE PATTERN"? \_\_\_\_\_
7. Tolerances required? \_\_\_\_\_ Established? \_\_\_\_\_ Citation: \_\_\_\_\_
8. Full labeling being used? \_\_\_\_\_ Supplemental directions? \_\_\_\_\_
9. Does label state "FOR DISTRIBUTION AND USE ONLY WITHIN (State)"? \_\_\_\_\_
10. Does full label comply with 40 CFR 162.10, as follows:
- |   |       |
|---|-------|
| a. Product name, brand or trademark?          | _____ |
| b. Name and address of registrant?            | _____ |
| c. Net contents?                              | _____ |
| d. Product registration number?               | _____ |
| e. Producing establishment number?            | _____ |
| f. Ingredient statement?                      | _____ |
| g. Precautionary labeling?                    | _____ |
| h. Directions for use for special local need? | _____ |
| i. Use classification?                        | _____ |

Was proper format followed? \_\_\_\_\_

11. Is supplemental directions for use labeling satisfactory? \_\_\_\_\_
12. Was supplemental labeling compared with EPA-registered label? \_\_\_\_\_

COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1 SLN No OH 08 0002 2 PM 07 3 Action Code \_\_\_\_\_

4 State Issue Date

0	3	2	4	0	8
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5 Date received by EPA

0	3	2	4	0	8
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6 Date received by PM

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7 Chemical name \_\_\_\_\_

8 Chemical code 4

9 Use \_\_\_\_\_

10. Reviews requested:

	Date Sent	Due Date	Date Returned	Response Code	Response Date
HED					
EFB					
RCB					
EEB					
TB					
RD					
PM					
S					
Precaut. Labeling					
Chemistry					
Efficacy					

11. Status \_\_\_\_\_

12. FINAL ACTION Response code \_\_\_\_\_

Response date

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**APPLICATION FOR A SPECIAL LOCAL  
NEED REGISTRATION IN OHIO**

**FOR THE USE OF TREE-ÄGE™  
FOR CONTROL OF EMERALD ASH BORER  
IN ASH TREES, TREE INJECTION ONLY**

**March 20, 2008**

**Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419**



# Ohio Department of Agriculture



Governor Ted Strickland  
Lieutenant Governor Lee Fisher  
Director Robert Boggs

Division of Plant Industry – Pesticide/Fertilizer  
8995 East Main Street – Reynoldsburg, Ohio 43068  
Phone: 614-728-6397 • Fax 614-728-4221  
• e-mail: [goodman@agri.ohio.gov](mailto:goodman@agri.ohio.gov)  
ODA home page: [www.ohioagriculture.gov](http://www.ohioagriculture.gov)

March 24, 2008

Document Processing Desk (SLN)  
Office of Pesticide Programs 7504P  
U. S. Environmental Protection Agency  
Ariel Rios Building  
1200 Pennsylvania Avenue, NW  
Washington, D. C. 20460

Dear Sir/Madam:

The Ohio Department of Agriculture's Pesticide Regulation Section is submitting for your review an Application for/Notification of State Registration of a Pesticide to Meet a Specific Local Need for the product TREE-age. You will find the following:

- A completed EPA Form 8570-25;
- An explanation of the necessity for the special local need from Professor Dan Herms, The Ohio State University and from Professor Deborah McCullough, Michigan State University;
- A copy of a label for TREE-age and a booklet on TREE-age; and
- Other information as necessary.

The reason for this request is to control emerald ash borer in the State of Ohio.

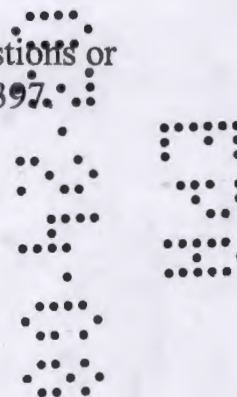
Please review the information we have provided, and if you have any questions or would like to discuss this with me, please contact this office at 614-728-6397.


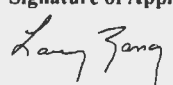
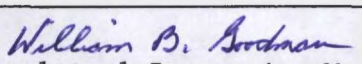
Sincerely,

OHIO DEPARTMENT OF AGRICULTURE

*William B. Goodman*

William B. Goodman  
Agriculture Inspection Manager  
Pesticide Regulation Section



	<b>United States Environmental Protection Agency</b> <b>Office of Pesticide Programs, Registration Division (7505C)</b> <b>Washington, DC 20460</b>		<b>For State Use Only</b> <b>Registration No. Assigned</b> <b>OH-080002</b>
	<b>Application for/Notification of State Registration</b> <b>of a Pesticide To Meet a Special Local Need</b> <b>(Pursuant to section 24(c) of the Federal Insecticide,</b> <b>Fungicide, and Rodenticide Act as Amended</b>		<b>Date Registration Issued</b>  <b>March 24, 2008</b>
<b>1. Name and Address of Applicant for Registration</b> Syngenta Crop Protection, Inc. PO Box 18300 Greensboro, NC 27419	<b>2. Product is (Check one)</b> EPA-Registered <input type="checkbox"/> New (not EPA-registered) <input checked="" type="checkbox"/> Attach EPA Form 8570-4, Confidential Statement of Formula for new products.		EPA Registration Number <b>100-RGNO</b> EPA Company Number <b>100</b>
<b>3. Active Ingredient(s) in Product</b> Emamectin benzoate			
<b>4. Product Name</b> TREE-age™	<b>5. If this is a food/feed use, a tolerance or other residue clearance is required. Cite appropriate regulations in 40 CFR Part 180. 186, and/or 186. non-food use</b>		
<b>6. Type of Registration (Give details in Item 13 or on a separate page, properly identified and attached to this form):</b> <input checked="" type="checkbox"/> a. To permit use of a new product. <input type="checkbox"/> b. To amend EPA registration for one or more of the following purposes: <input type="checkbox"/> (1) To permit use on additional crops or animals. <input type="checkbox"/> (2) To permit use at additional rates. <input type="checkbox"/> (3) To permit use against additional pests. <input type="checkbox"/> (4) To permit use of additional application techniques or equipment. <input type="checkbox"/> (5) To permit use at different application sites. <input type="checkbox"/> (6) Other (specify below) See paragraph 13		<b>7. Nature of Special Local Need (check one)</b> X - See paragraph 13 <input type="checkbox"/> There is no pesticide product registered by EPA for such use. <input checked="" type="checkbox"/> There is no EPA-registered pesticide product which, under the conditions of use within the State, would be as safe and/or as efficacious for such use within the terms and conditions of EPA registration. <input type="checkbox"/> As appropriate EPA-registered pesticide product is not available.	
<b>10. Has FIFRA section 24(c) registration for this use of the product ever, by another State, been (check appropriate box(es), if known):</b> <input checked="" type="checkbox"/> Sought <input checked="" type="checkbox"/> Issued <input type="checkbox"/> Denied <input type="checkbox"/> Revoked If any of the above are checked, list States in Item 13 below. <input type="checkbox"/> No FIFRA section 24(c) Action		<b>8. If this registration is an amendment to an EPA-registered product, is it for a "new use" as defined in 40 CFR 152.3?</b> <input type="checkbox"/> Yes (discuss in Item 13 below) <input type="checkbox"/> No	
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		<b>9. Has an EPA Registration or Experimental Use Permit for this chemical even been (check applicable box(es), if known):</b> <input checked="" type="checkbox"/> Sought <input type="checkbox"/> Issued <input type="checkbox"/> Denied <input type="checkbox"/> Cancelled <input type="checkbox"/> Suspended <input type="checkbox"/> Registration <input type="checkbox"/> Experimental Use Permit <input type="checkbox"/> No Previous Permit Action	
<b>Signature of Applicant or Authorized Representative</b> 		<b>11. Endangered Species Act: (Give details in Item 13 or on a separate page, properly identified and attached to this form.)</b> Identify the counties where this pesticide will be used. If Statewide, indicate "all." Provide a list of Federally protected endangered/threatened species which occur in the areas of proposed use.	
<b>Title</b> Larry Zang Sr. Regulatory Manager		<b>12. Indicate use status of Special Local Need, i.e., planned dates of use:</b> From: January To: December	
<b>Telephone Number</b> 800-334-9481 ext 2146 <b>Date</b> March 20, 2008		<b>13. Comments (attach additional sheet, if needed)</b> 10. SLN being sought for product pending Section 3 registration at EPA WV approved as SLN No. WV-080002 11. All	
<b>Determination by State Agency</b> This registration is for a Special Local Need and is being issued in accordance with section 24(c) of FIFRA, as amended. To the best of our knowledge, the information above is correct, except as noted in "Comments" below or in attachments			
<b>Name, Title, and Address of State Agency Official</b> William B. Goodman, Ohio Dept. of Ag Plant Industry Div. - Pesticide Reg. 8995 East Main Street Reynoldsburg, Ohio 43068  Agricultural Inspection Manager		<b>Comments (by State Agency Only)</b> This SLN is for the control of emerald ash borer for the entire State of Ohio.	
<b>Telephone Number</b> 614-728-6397 <b>Date</b> 3-24-08		<b>Received by EPA</b>	





State Regulatory Affairs  
410 Swing Road  
Greensboro, NC 27419

Telephone: (336) 632 2146  
Fax: (336) 632 2884

March 20, 2008

Bill Goodman  
Ohio Department of Agriculture  
Pesticide Regulation Section  
Plant Industry Division  
8995 East Main Street  
Reynoldsburg, Ohio 43068

RECEIVED

MAR 21 2008

PEST/FERT SECTION

SUBJECT: TREE-äge™ (EPA Reg. No. 100-RGNO)  
SLN Application for Emerald Ash Borer Control in Ash (*Fraxinus* spp.)  
Active Ingredient: Emamectin Benzoate

Dear Mr. Goodman:

Attached please find a special local need application for the use of TREE-äge for control of emerald ash borer (EAB) in Ash. TREE-äge is especially formulated for application as a tree injection. The active ingredient, emamectin benzoate, is registered in the US as a foliar treatment for insect pest control in vegetables, pome fruits, and cotton. Of the two end-use products, Proclaim® (EPA Reg. No. 100-904) and Denim® (EPA Reg. No. 100-904), Proclaim has been registered and widely used in Ohio for several years.

The justification is there is not another federally registered product as efficacious as TREE-age for control of this APHIS quarantine pest in Ohio.

#### **Efficacy**

The efficacy studies supporting this use were conducted by Dr. Deb McCullough of Michigan State University. Field research demonstrates that TREE-age is more efficacious than the current standards against EAB.

#### **TREE-äge Regulatory Status at USEPA**

TREE-äge does not currently have a Section 3 registration with EPA. The Section 3 draft label, product chemistry and acute toxicology studies were submitted to EPA on December 20, 2007. These studies were assigned reference (MRID) numbers and passed the front end screen at EPA. The EPA correspondence for the submission is included with this package. In summary, TREE-äge is ready for review at the Agency with a PRIA registration decision scheduled for mid-July 2008. This is well after the optimum tree injection application window of mid-April.

While currently registered Syngenta branded products that contain emamectin benzoate (Proclaim and Denim) are classified for Restricted Use (RU), in the EPA submission for registration for TREE-äge we did not propose RU for this product. Syngenta scientists felt that because of the use pattern as a tree injection there was little or no environmental exposure potential, and since the RU classification for the products noted above was based on ecotoxicity concerns, Syngenta reasoned that it was not necessary for TREE-äge to be classified for RU.

Subsequent discussions with EPA (Thomas Harris in the Insecticide Branch, Registration Division) confirmed that our position was reasonable. In fact, Mr. Harris indicated to Syngenta that no internal EPA ecological risk assessment was deemed necessary for TREE-äge since the EPA staff were comfortable with tree injection technology and the lack of exposure in the environment outside the target tree itself from this application technique. While the final Section 3 registration decision/approval will not occur until July 2008, our discussions with EPA have led us to believe that TREE-äge will not be classified for Restricted Use by EPA.

Please feel free to contact Thomas Harris of EPA's Registration Division at (703) 308-9423 for further discussion on the processing of the registration request for TREE-äge.

#### **Tolerances for Emamectin Benzoate**

The use sites/crops on the proposed TREE-äge Section 24(c) label do not require tolerances.

#### **Confidential Statement of Formula (CSF)**

The Confidential Statement of Formula (CSF) for TREE-äge is Confidential Business Information (CBI) and Syngenta Crop Protections requests that all applicable Ohio law be used for its protection.

#### **Summary**

TREE -äge is the most efficacious product available for control of EAB. Although the formulation is not yet approved by EPA, Product Chemistry and Acute Toxicology studies have been conducted to determine the appropriate Hazard and Precautionary Language. Tolerances are not required for this crop use pattern.

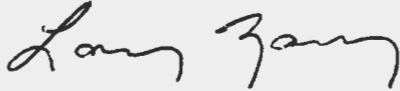
Enclosed in support of this submission are:

- Draft Section 24(c) label for TREE-äge providing Directions for Use on ash
- Section 24(c) Booklet Label for container
- Draft Section 3 label pending at EPA
- EPA 8570-25 form
- MSDS for TREE-äge
- Letter of support from Dr. Daniel Herms, Department of Entomology, OARDC
- Efficacy Data from Dr. Deb McCullough, Michigan State University
- State of Ohio Pesticide Product Registration Form and check for \$150.00
- Syngenta submission on December 20, 2007 to EPA for TREE-äge Section 3 label
- EPA Letter dated December 27, 2007 passage of front-end screen
- EPA Letter dated December 31, 2007 assigning MRID numbers to studies
- Acute Toxicology Studies and Product Chemistry studies submitted to EPA. See Attachment 1 for list of studies
- Confidential Statement of Formula (in separate folder)

Mr. Bill Goodman  
March 20, 2008  
Page 3

Syngenta believes it has included sufficient evidence to support approval of this application. However, please feel free to contact me at 1 (800) 334-9481, ext. 2146 if you have questions or require any further data or information.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Zang". The signature is fluid and cursive, with the first name "Larry" and last name "Zang" clearly distinguishable.

Larry Zang  
Senior Regulatory Manager

Enclosures

CC: Dr. Daniel Herms



**SYNGENTA CROP PROTECTION**  
**TREE-äge™ (EPA REG. NO 100-RGNO)**  
**ACTIVE INGREDIENT Enamectin Benzoate**

March 20, 2008

List of Submitted Documents

**Acute Toxicology Studies**

MRID Number		Study Title	EPA Guideline
<b>47309303</b>	4 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Acute Oral Toxicity Up-and-Down Procedure in Rats; (T007407-06), (09003aeb80273dda), (462221)	870.1100
<b>47309304</b>	5 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Acute Dermal Toxicity in Rats; (T007408-06), (09003aeb80273dda), (462223)	870.1200
<b>47309305</b>	6 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Acute Inhalation Toxicity in Rats; (T007412-06), (09003aeb80273dda), (462231)	870.1300
<b>47309306</b>	7 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Primary Eye Irritation in Rabbits; (T007410-06), (09003aeb80273dda), (462227)	870.2400
<b>47309307</b>	8 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Primary Skin Irritation in Rabbits; (T007409-06), (09003aeb80273dda), (462225)	870.2500
<b>47309308</b>	9 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Dermal Sensitization Test - Buehler Method; (T007411-06), (09003aeb80273dda), (462229)	870.2600

**Product Chemistry**

<b>47309302</b>	3 OF 9	A16297A -Physical and Chemical Properties of Enamectin Benzoate ME (042.9) (A16297A); (PC-07-085), (09003aeb80273dda), (462237)	830.6302, 830.6303, 830.6304, 830.6314, 830.6315, 830.6316, 830.6319, , 830.7000, 830.7100, 830.7300
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**syngenta**

**ETERA**

FOR DISTRIBUTION AND USE ONLY WITHIN THE STATE OF OHIO

**TREE-äge™**

EPA SLN No. OH-xxxxxx

For control of Emerald Ash Borer in Ash Trees (*Fraxinus spp.*),  
Tree Injection Only

Active Ingredient:

Emamectin Benzoate<sup>1</sup> ..... 4.0%

Other Ingredients: ..... 96.0%

Total: ..... 100.0%

<sup>1</sup>CAS No.155569-91-8

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use on label and in in  
booklet

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY  
RESULT IN POOR INSECT CONTROL, AND/OR CROP INJURY,.

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## DIRECTIONS FOR USE

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It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Follow all applicable directions, restrictions, Worker Protection Standard requirements, and precautions on the TREE-äge container label.

This label must be in the possession of the user at the time of pesticide application.

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## APPLICATION TO ASH TREES (*Fraxinus* spp.)

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TREE-äge is for control of emerald ash borer on ash trees growing in residential and commercial landscapes, parks, plantations, right of ways, seed orchards, and forested sites (in private, municipal, state, tribal and national areas). TREE-äge contains the active ingredient emamectin benzoate and is formulated to translocate in the tree's vascular system when injected. To assure optimum effectiveness, this product must be placed into active sapwood.

### WHEN TO TREAT

TREE-äge contains the active ingredient emamectin benzoate which is a glycoside insecticide. It is active against larva and adult Emerald Ash Borer. The primary route of toxicity is through ingestion, but may also be lethal upon contact.

**ENVIRONMENTAL CONDITIONS:** Uptake of TREE-äge is dependent upon the tree's transpiration. Transpiration is dependent on a number of abiotic and biotic factors, such as soil moisture, soil and ambient temperature, and time of day. For optimal uptake, apply when soil is moist, soil temperatures are above 45°F, ambient temperatures are between 40° to 90°F, and during the 24 hour period when transpiration is greatest, typically before 2:00 PM. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Watering the trees prior to injection may enhance the uptake of TREE-äge.

**MONITOR TREE HEALTH and PEST INFESTATIONS:** Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by arthropod damage (larval galleries, defoliation, leaf mining, etc.), an effective and uniform application of TREE-äge may be difficult to achieve and subsequent control may be poor. Optimally, treatment should be made preventively at least 2 to 3 weeks before Emerald Ash Borer historically infest the host tree. As a result of systemic movement and longevity of TREE-äge in trees, this interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

TREE-äge may also be effective as a curative treatment against Emerald Ash Borer. Adult foliar feeding may be controlled within one month after treatment. During the larval stage, Emerald Ash Borer attacks the stem and branches and will disrupt vascular tissue that may result in poor distribution of TREE-äge in an infested tree. However, control may be achieved if larvae come into contact or feed on TREE-äge treated tissues.

## USE

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

## USE RATE TABLE

Tree Diameter (DBH) (Inches)	Low ml./tree	Medium ml./tree	Medium - High ml./tree	High ml./tree	Average No. Injection Sites*
4 to 6	15	25	50	-	3
7 to 9	20	40	80	-	4
10 to 12	30	55	110	165	5
13 to 15	35	70	140	210	6
16 to 18	40	75	150	225	7
19 to 21	50	100	200	300	8
22 to 24	-	115	230	345	10
25 to 27	-	130	260	390	11
28 to 30	-	145	290	435	12
31 to 33	-	160	320	480	13
34 to 36	-	175	350	525	15
37 to 39	-	190	380	570	16
40 to 42	-	205	410	615	17
43 to 45	-	220	440	660	18
46 to 48	-	235	470	705	20
49 to 51	-	250	500	750	21
52 to 54	-	265	530	795	22
55 to 57	-	280	560	840	23
58 to 60	-	295	590	885	25
61 to 63	-	310	620	930	26
64 to 66	-	325	650	975	27
67 to 69	-	340	680	1020	28
70 to 72	-	355	710	1065	30



\* The number of injection sites listed is a guide for approximately how many are needed per size of tree.  
 For optimal control, it is recommended to be with  $\pm 1$  injection site of this number per tree.  
 Higher rates tend to provide longer residual and control of more difficult to control insects. See **Target Pest** for additional information in choosing the amount of product to apply.

### Applications in Trees

Tree Tissue to Protect	Target Pest	Recommended Rate	Comments
Foliage, Shoot, Stem, Trunk and Branch	Emerald Ash Borer- Adult and Larval stages	Low to High	For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged.  If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.

### Compatibility

Do not mix TREE-äge before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers.

### RESTRICTIONS

- Do not apply to trees that may yield food consumed by humans or used in animal feed.
- Avoid treating trees that are moisture stressed or suffering from herbicide damage.

TREE-äge™ trademark of Arborjet, Inc.

24(c) registrant:  
 Syngenta Crop Protection, Inc.  
 P.O. Box 18300  
 Greensboro, NC 27419-8300

Label Code: OHRGNOxxxAA0308

(24C booklet)

This product is approved for distribution and use only under FIFRA Section 24(C) for control of arthropod pests in trees. The user must have a copy of the state-approved FIFRA Section 24(c) label which permits use of this product at the time of pesticide application and follow all directions for use, restrictions, and precautions. Contact your state department of agriculture or state agency responsible for pesticide regulation to determine if a Section 24(c) is in effect in your state.

**TREE-äge™**

**Injected insecticide for the control for arthropod pests in trees**

Active Ingredient:

Eamectin Benzoate<sup>1</sup> ..... 4.0%

Other Ingredients: ..... 96.0%

Total: ..... 100.0%

<sup>1</sup>CAS No.155569-91-8

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use in booklet.

EPA Est. 39578-TX-1

Product of China

Formulated in the USA

SCP A22 0108

1.06 quarts (1 liter)

Net Contents

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### WARNING/AVISO

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

FIRST AID	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>•Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>•Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>•Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>•Call poison control center or doctor immediately for treatment advice.</li> <li>•Have person sip glass of water if able to swallow.</li> <li>•Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>•Do not give anything by mouth to an unconscious person.</li> </ul>
<p align="center"><b>NOTE TO PHYSICIAN</b></p> <p>Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (&lt; 15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic emamectin benzoate exposure.</p>	

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal),  
Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)

Call

**1-800-888-8372**

**Personal Protective Equipment (PPE)**

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- shoes and socks
- protective eyewear

**Environmental Hazards**

This product is highly toxic to fish, mammals and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees.

**Physical or Chemical Hazards**

Do not use or store near heat or open flame.



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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**IMPORTANT:** Read entire label before using this product. Failure to follow label instructions may result in poor control or tree injury. Failure to follow label directions may cause injury to people, animals and environment.

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### APPLICATION TO TREES

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TREE-äge is for control of mature and immature arthropod pests of trees, including, but not limited to, those growing in residential and commercial landscapes, parks, plantations, seed orchards, and forested sites (in private, municipal, state, tribal and national areas). TREE-äge contains the active ingredient emamectin benzoate and is formulated to translocate in the tree's vascular system when injected. To assure optimum effectiveness, this product must be placed into active sapwood.

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### GENERAL DIRECTIONS

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TREE-äge is designed for use with tree injection devices that meet the label and dose requirements (for example, the Arborjet Tree Injection Systems) for the control of listed pests of trees. Follow manufacturer's directions for equipment use.

Dosages are based on the Diameter (in inches) of the tree at Breast Height (DBH"). Breast height is a standardized distance of 54" from the ground. Often the diameter is determined from measuring the circumference of the tree at this height, and dividing circumference (in inches) by three (3). To determine DBH" for multi-stemmed woody ornamentals, measure the DBH" for each stem or branch and add together for the total DBH" per tree.

**Placement of Application/Injection Sites:** for optimum distribution, inject at the base of the tree. Inject into the stem within 12" of the soil, into the trunk flare or into tree roots exposing them by shallow excavation. Make applications into intact, healthy sapwood. Avoid injured areas or areas with decay. Select injection sites associated with stem growth.

**Number of Injection Sites:** Work around the tree, spacing injection sites approximately every 6.0 inches of tree's circumference.

**Drill Depth:** Drill through the bark then 5/8" to 1-5/8" (hardwoods) or 1-5/8" to 2" (conifers) into the sapwood with the appropriate sized drill bit. Use clean, sharp drill bits. Brad point bits are recommended. Precautions should be taken to avoid diseased areas and transferring infected tissues to other injection sites.

## **Resinous Conifers**

In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake on account of resin flow into opening.

## **WHEN TO TREAT**

TREE-äge contains the active ingredient emamectin benzoate which is a glycoside insecticide. It is active against immature and adult stages of arthropods. The primary route of toxicity is through ingestion, but may also be lethal upon contact.

**ENVIRONMENTAL CONDITIONS:** Uptake of TREE-äge is dependent upon the tree's transpiration. Transpiration is dependent on a number of abiotic and biotic factors, such as soil moisture, soil and ambient temperature, and time of day. For optimal uptake, apply when soil is moist, soil temperatures are above 45°F, ambient temperatures are between 40° to 90°F, and during the 24 hour period when transpiration is greatest, typically before 2:00 PM. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Watering the trees prior to injection may enhance the uptake of TREE-äge.

**MONITOR TREE HEALTH and PEST INFESTATIONS:** Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by arthropod damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of TREE-äge may be difficult to achieve and subsequent control may be poor. Optimally, treatment should be made preventively at least 2 to 3 weeks before arthropods historically infest the host tree. As a result of systemic movement and longevity of TREE-äge in trees, this interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

## **Compatibility**

Do not mix TREE-äge before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers.

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## **RESTRICTIONS**

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- Do not apply to trees that may yield food consumed by humans or used in animal feed.
- Avoid treating trees that are moisture stressed or suffering from herbicide damage.

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## **STORAGE AND DISPOSAL**

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Do not contaminate water, food, or feed by storage and disposal.

### **Pesticide Storage**

Store in a cool, dry place, away from children and pets. Keep from freezing.

### **Pesticide Disposal**

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### **Container Disposal**

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

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TREE- äge is a registered trademark of Arborjet, Inc.

Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP A22 0108

TREE-age 24C-A22 0108-booklet-Ig-1-21-08



*(24C non-detachable container label)*

**This product is approved for distribution and use only under FIFRA Section 24(C) for control of arthropod pests in trees. The user must have a copy of the state-approved FIFRA Section 24(c) label which permits use of this product at the time of pesticide application and follow all directions for use, restrictions, and precautions. Contact your state department of agriculture or state agency responsible for pesticide regulation to determine if a Section 24(c) is in effect in your state.**

**TREE-äge™**

**Injected insecticide for the control for arthropod pests in trees**

Active Ingredient:

Emamectin Benzoate <sup>1</sup> .....	4.0%
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Other Ingredients: .....	96.0%
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Total: .....	100.0%
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<sup>1</sup>CAS No. 155569-91-8

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use in booklet.

EPA Est. 39578-TX-1

SCP A22 0108

1.06 quarts (1 liter)  
Net Contents

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### WARNING/AVISO

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

FIRST AID	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>•Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>•Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>•Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>•Call poison control center or doctor immediately for treatment advice.</li> <li>•Have person sip glass of water if able to swallow.</li> <li>•Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>•Do not give anything by mouth to an unconscious person.</li> </ul>
<p style="text-align: center;"><b>NOTE TO PHYSICIAN</b></p> <p>Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (&lt; 15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic emamectin benzoate exposure.</p>	

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal),  
Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)

Call

**1-800-888-8372**

**STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage and disposal.

**Pesticide Storage**

Store in a cool, dry place, away from children and pets. Keep from freezing.

**Pesticide Disposal**

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**Container Disposal**

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

---

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Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
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[www.syngenta-us.com](http://www.syngenta-us.com)

SCP A22 0108

TREE-age 24C-A22 0108-booklet-Ig-1-21-08

(Master label)

**TREE-äge™****Injected insecticide for the control for arthropod pests in trees**

Active Ingredient:

Emamectin Benzoate<sup>1</sup> ..... 4.0%

Other Ingredients: ..... 96.0%

Total: ..... 100.0%

<sup>1</sup>CAS No.155569-91-8**KEEP OUT OF REACH OF CHILDREN.****WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use on label[in booklet].

EPA Reg. No. 100-xxxxx

EPA Est. xxxxx

Product of xxxxx

Formulated in xxxxx

SCP xxxxxA-M(draft TREE-äge)

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**Net Contents**

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### WARNING/AVISO

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

FIRST AID	
<b>If in eyes</b>	<ul style="list-style-type: none"> <li>•Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>•Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>•Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If swallowed</b>	<ul style="list-style-type: none"> <li>•Call poison control center or doctor immediately for treatment advice.</li> <li>•Have person sip glass of water if able to swallow.</li> <li>•Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>•Do not give anything by mouth to an unconscious person.</li> </ul>
<p style="text-align: center;"><b>NOTE TO PHYSICIAN</b></p> <p>Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (&lt; 15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic emamectin benzoate exposure.</p>	



Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal),  
Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)  
Call  
**1-800-888-8372**

**Personal Protective Equipment (PPE)**

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- shoes and socks
- protective eyewear

**Environmental Hazards**

This product is highly toxic to fish, mammals and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees.

**Physical or Chemical Hazards**

Do not use or store near heat or open flame.

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**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**IMPORTANT:** Read entire label before using this product. Failure to follow label instructions may result in poor control or tree injury. Failure to follow label directions may cause injury to people, animals and environment.

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### APPLICATION TO TREES

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TREE-äge is for control of mature and immature arthropod pests of trees, including, but not limited to, those growing in residential and commercial landscapes, parks, plantations, seed orchards, and forested sites (in private, municipal, state, tribal and national areas). TREE-äge contains the active ingredient emamectin benzoate and is formulated to translocate in the tree's vascular system when injected. To assure optimum effectiveness, this product must be placed into active sapwood.

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### GENERAL DIRECTIONS

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TREE-äge is designed for use with tree injection devices that meet the label and dose requirements [(for example, the Arborjet Tree Injection Systems)] for the control of listed pests of trees. Follow manufacturer's directions for equipment use.

Dosages are based on the Diameter (in inches) of the tree at Breast Height (DBH"). Breast height is a standardized distance of 54" from the ground. Often the diameter is determined from measuring the circumference of the tree at this height, and dividing circumference (in inches) by three (3). To determine DBH" for multi-stemmed woody ornamentals, measure the DBH" for each stem or branch and add together for the total DBH" per tree.

**Placement of Application/Injection Sites:** for optimum distribution, inject at the base of the tree. Inject into the stem within 12" of the soil, into the trunk flare or into tree roots exposing them by shallow excavation. Make applications into intact, healthy sapwood. Avoid injured areas or areas with decay. Select injection sites associated with stem growth.

**Number of Injection Sites:** Work around the tree, spacing injection sites approximately every 6.0 inches of tree's circumference.

**Drill Depth:** Drill through the bark then 5/8" to 1-5/8" (hardwoods) or 1-5/8" to 2" (conifers) into the sapwood with the appropriate sized drill bit. Use clean, sharp drill bits. Brad point bits are recommended. Precautions should be taken to avoid diseased areas and transferring infected tissues to other injection sites.

## **Resinous Conifers**

In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake on account of resin flow into opening.

## **WHEN TO TREAT**

TREE-äge contains the active ingredient emamectin benzoate which is a glycoside insecticide. It is active against immature and adult stages of arthropods. The primary route of toxicity is through ingestion, but may also be lethal upon contact.

**ENVIRONMENTAL CONDITIONS:** Uptake of TREE-äge is dependent upon the tree's transpiration. Transpiration is dependent on a number of abiotic and biotic factors, such as soil moisture, soil and ambient temperature, and time of day. For optimal uptake, apply when soil is moist, soil temperatures are above 45°F, ambient temperatures are between 40° to 90°F, and during the 24 hour period when transpiration is greatest, typically before 2:00 PM. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Watering the trees prior to injection may enhance the uptake of TREE-äge.

**MONITOR TREE HEALTH and PEST INFESTATIONS:** Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by arthropod damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of TREE-äge may be difficult to achieve and subsequent control may be poor. Optimally, treatment should be made preventively at least 2 to 3 weeks before arthropods historically infest the host tree. As a result of systemic movement and longevity of TREE-äge in trees, this interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

TREE-äge may also be effective as a curative treatment against some pests, such as those with slower development or if multiple life stages are susceptible to TREE-äge. Foliar pests may be controlled within 1- 2 weeks after treatment under ideal conditions. Pests that attack the stem and branches such as bark beetles and clearwing borers may disrupt vascular tissue resulting in poor distribution in an infested tree. This includes the initial larval stages of pests, such as bark beetles and clearwing borers, that attack the stem and branches, which may disrupt vascular tissue resulting in poor distribution of the product in an infested tree. However, control may be achieved if larvae come into contact or feed on TREE-äge treated tissues.

## USE

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

### USE RATE TABLE

Tree Diameter (DBH) (Inches)	Low ml./tree	Medium ml./tree	Medium - High ml./tree	High ml./tree	Average No. Injection Sites*
4 to 6	15	25	50	-	3
7 to 9	20	40	80	-	4
10 to 12	30	55	110	165	5
13 to 15	35	70	140	210	6
16 to 18	40	75	150	225	7
19 to 21	50	100	200	300	8
22 to 24	-	115	230	345	10
25 to 27	-	130	260	390	11
28 to 30	-	145	290	435	12
31 to 33	-	160	320	480	13
34 to 36	-	175	350	525	15
37 to 39	-	190	380	570	16
40 to 42	-	205	410	615	17
43 to 45	-	220	440	660	18
46 to 48	-	235	470	705	20
49 to 51	-	250	500	750	21
52 to 54	-	265	530	795	22
55 to 57	-	280	560	840	23
58 to 60	-	295	590	885	25
61 to 63	-	310	620	930	26
64 to 66	-	325	650	975	27
67 to 69	-	340	680	1020	28
70 to 72	-	355	710	1065	30

\* The number of injection sites listed is a guide for approximately how many are needed per size of tree.

For optimal control, it is recommended to be with  $\pm 1$  injection site of this number per tree. Higher rates tend to provide longer residual and control of more difficult to control insects. See **Target Pest** for additional information in choosing the amount of product to apply.

## Applications in Trees

Tree Tissue	Target Pest	Recommended Rate	Comments
Seed and Cone	Pine Cone Worm ( <i>Dioryctria</i> spp)	Medium to High	For optimal control apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	Bagworm Fall Webworm Gypsy Moth Leafminers (including Diptera, Lepidoptera, Coleoptera, Hymenoptera) Orange-striped Oakworm	Low to High	For optimal control apply at least 2-3 weeks before economic threshold is predicted.
	<b>Mites:</b> Eryiophid mites European red mite Spruce spider mites Twospotted spider mite Sawfly Erythrina gall wasp	Low to High	
	<b>Tent Caterpillars</b> (including Eastern, Forest, Pacific, and Western) Western Spruce budworm Winter Moth	Low to Medium	
Shoot, Stem, Trunk and Branch	<b>Buprestid Borers</b> (Flathead borers including Emerald Ash Borer, Bronze birch borer, two-lined chestnut borer)	Low to High	For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged.  If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
	Clearwing borers Horntails	Low to Medium	
	<b>Longhorn borers-</b> (Roundhead borers including Asian, Eucalyptus, Pine Sawyer) Pine wood nematode Pales Weevil ( <i>Hyllobius pales</i> ) <b>Scolytids (bark beetles)</b> <i>Ips</i> engraver beetles Mountain pine beetle Southern pine beetle Spruce beetle Western pine beetle White pine weevil	Medium to High	



## Compatibility

Do not mix TREE-äge before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers.

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## RESTRICTIONS

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- Do not apply to trees that may yield food consumed by humans or used in animal feed.
- Avoid treating trees that are moisture stressed or suffering from herbicide damage.

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## STORAGE AND DISPOSAL

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Do not contaminate water, food, or feed by storage and disposal.

### Pesticide Storage

Store in a cool, dry place, away from children and pets. Keep from freezing.

### Pesticide Disposal

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### Container Disposal

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

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TREE- äge is a registered trademark of Arborjet, Inc.

The Syngenta logo and the CP FRAME  are trademarks of a Syngenta Group Company  
©2007 Syngenta

For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP xxxxxA-M(draft TREE-äge)

TREE-age xxxxxA-M(draft)-lg-12-20-07 000100-xxxxx.20071220.treeage.pdf



## MATERIAL SAFETY DATA SHEET

Syngenta Crop Protection, Inc.  
Post Office Box 18300  
Greensboro, NC 27419

In Case of Emergency, Call  
1-800-888-8372

### 1. PRODUCT IDENTIFICATION

Product Name: **TREE-äge** Product No.: A16297A  
EPA Signal Word: Warning  
Active Ingredient(%): Emamectin Benzoate (4%) CAS No.: 155569-91-8  
Chemical Name: Avermectin B1, 4"-deoxy-4"-(methylamino)-, (4"R)-, benzoate (salt)  
Chemical Class: Insecticide  
EPA Registration Number(s): Not Available Section(s) Revised: New

### 2. HAZARDS IDENTIFICATION

#### Health and Environmental

Causes eye and skin irritation. May be harmful if swallowed. Harmful if inhaled. Vapors may cause drowsiness and dizziness.

Inhalation can cause irritation to the respiratory tract and can result in chemical pneumonitis if aspirated. Ingestion results in central nervous system effects such as muscle tremors, decreased activity, ataxia (unsteadiness or incoordination), and dilated pupils (mydriasis).

#### Hazardous Decomposition Products

May decompose at high temperatures forming toxic gases.

#### Physical Properties

Appearance: Blue liquid  
Odor: Aromatic

#### Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Tetrahydrofurfuryl Alcohol (THFA)	Not Established	Not Established	2 ppm (TWA) ****	No
Emamectin Benzoate (4%)	Not Established	Not Established	0.02 mg/m <sup>3</sup> TWA ***	No

\*\*\* Syngenta Occupational Exposure Limit (OEL)

\*\*\*\* Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.  
Syngenta Hazard Category: C, S

### 4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison

Product Name: **TREE-äge**

Page: 1

control center or doctor, or going to treatment.

- Ingestion:** If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

#### Notes to Physician

Contains petroleum distillate - vomiting may cause aspiration pneumonia.

Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (<15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms and measurements.

In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic emamectin benzoate exposure.

#### Medical Condition Likely to be Aggravated by Exposure

None known.

## **5. FIRE FIGHTING MEASURES**

### Fire and Explosion

Flash Point (Test Method):	> 226°F (Pensky-Martens CC)	
Flammable Limits (% in Air):	Lower: Not Applicable	Upper: Not Applicable
Autoignition Temperature:	662°F	
Flammability:	Not Applicable	

### Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

### In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

## **6. ACCIDENTAL RELEASE MEASURES**

### In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

## 7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Skin Contact: Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
- Inhalation: A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH approved respirator with any R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Blue liquid
- Odor: Aromatic
- Melting Point: Not Applicable
- Boiling Point: Not Available
- Specific Gravity/Density: 1.08 g/cm<sup>3</sup> @ 68°F (20°C)
- pH: 4.6 (1% solution in deionized H<sub>2</sub>O @ 77°F [25°C])

### Solubility in H<sub>2</sub>O

Emamectin Benzoate: 30 - 50 ppm (pH 7)

### Vapor Pressure

Emamectin Benzoate: 3 x 10<sup>-8</sup> mmHg @ 70°F (21°C)

## 10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: None known.
- Materials to Avoid: None known.
- Hazardous Decomposition Products: May decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Oral (LD<sub>50</sub> Female Rat) : 3129 mg/kg body weight
- Dermal: Dermal (LD<sub>50</sub> Rat) : > 5000 mg/kg body weight
- Inhalation:

Inhalation (LC50 Rat) : > 2.54 mg/l air - 4 h  
Eye Contact: Severely Irritating (Rabbit)  
Skin Contact: Slightly Irritating (Rabbit)  
Skin Sensitization: Not a Sensitizer (Guinea Pig)

#### Reproductive/Developmental Effects

Emamectin Benzoate: Developmental and reproductive toxicity observed in dosages that are toxic to mature animals.

#### Chronic/Subchronic Toxicity Studies

Emamectin Benzoate: Tremors and nerve lesions observed at lowest dose tested in rabbits. Bladder changes reported in rats.

#### Carcinogenicity

Emamectin Benzoate: None observed.

#### Other Toxicity Information

None

#### Toxicity of Other Components

Tetrahydrofurfuryl Alcohol (THFA)

May be harmful if swallowed. Causes respiratory tract irritation. Causes skin irritation. May cause digestive tract irritation. Causes severe eye irritation. Inhalation overexposure may cause dizziness, incoordination and unconsciousness. Chronic overexposure may affect the kidney.

#### Target Organs

##### Active Ingredients

Emamectin Benzoate: Central nervous system, bladder

##### Inert Ingredients

Tetrahydrofurfuryl Alcohol (THFA): Digestive tract, respiratory tract, skin, eye, CNS, kidney

## 12. ECOLOGICAL INFORMATION

#### Summary of Effects

Emamectin Benzoate:

Very toxic to aquatic life with long lasting effects.

#### Ecotoxicity Effects

Emamectin Benzoate:

Fish (Rainbow Trout) 96-hour LC50 174 ppb

Fish (Bluegill Sunfish) 96-hour LC50 180 ppb

Green Algae 5-day EC50 > 3.9 ppb

Bird (Bobwhite Quail) LD50 Oral 264 mg/kg

Bee (Contact) LD50 0.0035 ug/bee

Invertebrate (Water Flea) 48-hour EC50 1.0 ppb

#### Environmental Fate

Emamectin Benzoate:

The information presented here is for the active ingredient, emamectin benzoate.

Low bioaccumulation potential. Persistent in soil. Stable in water. Immobile in soil. Sinks in water (after 24 h).

## 13. DISPOSAL CONSIDERATIONS

#### Disposal



Do not reuse product containers. Dispose of product containers, waste containers and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

#### 14. TRANSPORT INFORMATION

##### DOT Classification

Ground Transport - NAFTA  
Not regulated by US DOT.

Air Transport - NAFTA  
Not regulated by US DOT.

##### B/L Freight Classification

Insecticides, NOI, O/T Poison

##### Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Emamectin Benzoate), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

IMDG EMS #: F-A, S-F

Air Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Emamectin Benzoate), Marine Pollutant

Hazard Class or Division: Class 9

Identification Number: UN 3082

Packing Group: PG III

Packing Auth.: 914

Note: Max. inner container 5 liter; Max. single container 450 liter

#### 15. REGULATORY INFORMATION

##### EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Not Applicable

##### California Proposition 65

Not Applicable

##### CERCLA/SARA 302 Reportable Quantity (RQ)

None

##### RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

##### TSCA Status

Exempt from TSCA, subject to FIFRA

#### 16. OTHER INFORMATION

##### NFPA Hazard Ratings

Health: 2  
Flammability: 1  
Instability: 0

##### HMIS Hazard Ratings

Health: 1  
Flammability: 1  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 11/30/2007

Revision Date:

Replaces:

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

End of MSDS



**Ohio Agricultural Research  
and Development Center**

Dr. Daniel A. Herms  
Tel: (330) 202-3506  
E-mail: herms.2@osu.edu

**Department of Entomology**  
1680 Madison Ave.  
Wooster, OH 44691-4096

Phone 330-263-3725  
FAX 330-263-3686

28 February 2008

**To:** William B. Goodman, Ohio Department of Agriculture

**From:** Daniel A. Herms

**Subject:** 24(c) registration for TREE-äge (Enamectin Benzoate) trunk injection in Ohio for control of emerald ash borer

I am writing to support the application of Syngenta for a Section 24(c) registration for TREE-äge Insecticide (Enamectin Benzoate) systemic trunk injection for control of emerald ash borer (*Agrilus planipennis*). Emerald ash borer (EAB) has killed millions of otherwise healthy ash trees, and is spreading rapidly in Ohio due to expansion of the core infestation south from Michigan, and the numerous outlier populations throughout the state that resulted from artificial spread by human activities. Insecticide treatments provide the only available option for protecting high-value ash trees from being killed by emerald ash borer in infested areas. Trunk injections provide an advantage over the soil drenches, soil injections, and bark/canopy sprays that are labeled for emerald ash borer by greatly reducing environmental exposure, as the insecticide is injected directly into the tree.

Research in two different laboratories at Michigan State University found that efficacy of Enamectin Benzoate exceeds other systemic insecticide formulations tested to date. I am also researching Enamectin Benzoate at two study sites in Toledo, Ohio. These studies are in the early stages and pest pressure is still low, and our results should be considered preliminary. Thus far, however, colonization of untreated control trees by EAB is almost 300% higher than in trees treated with Enamectin Benzoate. In another study, we found that Enamectin Benzoate trunk injections provided 100% control of gypsy larvae on pin oak trees.

Research has shown that high-value ash trees can be protected from emerald ash borer with insecticides. In practice, though, existing products have provided inconsistent results in the field. If registered, Enamectin Benzoate would provide the arboriculture industry with an environmentally-friendly option that has been shown to be highly effective for controlling emerald ash borer in several controlled, replicated university trials.

Sincerely,

Daniel A. Herms  
Associate Professor and Associate Chair

**MICHIGAN STATE  
UNIVERSITY**

February 1, 2008

Mr. Brian Hughes  
Michigan Dept. of Agriculture, PPPM Division  
PO Box 30017  
Lansing, MI 48909

Subject: Section 24(C) request for 'Tree-Age' for control of emerald ash borer

Dear Brian,

This letter is in support of a Section 24(c) registration for emamectin benzoate, an insecticide that appears to be highly effective as a tree injection treatment for controlling emerald ash borer (*Agilus planipennis* Fairmaire) (Coleoptera: Buprestidae). It is my understanding that Syngenta Crop Protection Inc. is seeking a Section 3 registration for this formulation from EPA under the name Tree-age, but approval is not expected until mid July 2008.

**Background:** As you know, emerald ash borer (EAB) is an invasive pest native to Asia that was discovered in North America in 2002. Currently, six states and the province of Ontario are dealing with EAB infestations. Adult beetles, active from mid May through August, feed on ash (*Fraxinus* sp.) foliage throughout their 3 to 6 week life span. Larvae feed in the phloem (inner bark) of the branches and trunk of ash trees during late summer and fall, disrupting the ability of the tree to transport nutrients and water (Cappaert et al. 2005).

Southeast Michigan, where EAB first became established (Siegert et al. 2007), has been severely affected by EAB. An estimated 25 million ash trees have been killed by EAB in this region alone. Additional populations of EAB continue to build in many areas of lower Michigan and two outlier populations were discovered in the Upper Peninsula last fall. More than 800 million ash trees growing in Michigan forests are likely to succumb as EAB populations expand. Millions of landscape ash trees planted by communities and private landowners are also vulnerable. A recent economic analysis predicted that EAB impacts on municipal landscape trees could cost Ohio communities \$1.8 to \$7.6 billion (Sydnor et al. 2007).

Several insecticide products, primarily neo-nicotinoids, are currently being used to protect high-value ash trees in landscape settings from EAB. These systemic products are typically applied annually, via trunk injection or as a soil drench or soil injection. Several products appear to successfully protect some ash trees in some situations, especially if used for multiple years. Effectiveness of these treatments, however, varies depending on the product and application method, tree size and vigor, growing conditions and beetle density in the area. In a four-year study conducted in two Ann Arbor neighborhoods, for example, green ash and white ash trees were treated annually from 2003-2006 with three commonly used insecticides applied as trunk injections. By fall 2006, 40-100% of the treated trees had died and even the surviving trees exhibited at least 20% canopy dieback (McCullough et al. 2006, Cappaert et al. 2007).

**DEPARTMENT OF  
ENTOMOLOGY**

Michigan State University  
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Moreover, none of the insecticide products currently registered for EAB control have been used in operational EAB programs to date. This is largely because efficacy of the treatments is difficult to predict and in general, efficacy is not sufficient to be acceptable to regulatory officials.

**2007 Study design:** In 2007, we initiated a study to assess the effectiveness of emamectin benzoate (applied as a trunk injection) for EAB control. We established a total of 25 randomized blocks at three different sites, enabling us to evaluate a range of tree size and growing conditions. Mean diameter at breast height (DBH) of trees used in the study ranged from 6.0 inches at the site with the smallest trees to 13.2 inches at the site with the largest trees. There were 6 to 12 trees per treatment at each of the three sites. Each block included seven trees of similar size, condition and location (total of 175 trees). Products tested, application rates and dates of application are presented in Table 1.

Our study was funded by grants from the USDA Forest Service and MSU's Project GREEN. The private companies involved in production or distribution of the products we tested supplied the insecticides and in some cases, assisted with application. They did not directly fund the research nor were any representatives from these companies involved in data collection.

**Evaluation:** To evaluate the insecticide treatments, we assessed insecticide residues in foliage over time and conducted bioassays to evaluate survival of adult EAB beetles caged with leaves from treated trees. In addition, we quantified larval density on a subset of trees in fall.

Foliage samples were collected from 8 locations in each tree in mid June, early July, late July and mid August. Foliage was individually bagged and frozen for eventual residue analysis by USDA APHIS cooperators with ELISA (imidacloprid, dinotefuron) or MS/HPLC (emamectin benzoate) methods. Analysis of foliage samples is in progress.

**Adult EAB bioassays:** Bioassays were conducted in mid June, early July and late July to assess survival of adult EAB beetles caged with leaves from each study tree. On each foliage sampling date, two leaves from opposite sides of each tree were selected for the bioassays. We placed three, apparently healthy, 4-8 day-old beetles with each leaf for four days. Beetle survival and feeding activity were monitored daily over the four days of the bioassay period.

By Day 4, mortality of beetles caged with leaves from the untreated control trees averaged 35%, 16% and 18%, respectively, in the June 15, July 11 and August 1 bioassays (Fig. 1). Mortality of beetles caged with leaves from trees treated with imidacloprid or dinotefuron ranged from 32% to 81% in the June 15 bioassay, but mortality rates dropped in subsequent bioassays. These mortality rates and the decline in foliage toxicity over time are similar to results from previous studies we have conducted with EAB.

Notably, however, we observed 100% mortality of beetles caged with leaves from emamectin benzoate trees in all three bioassay periods (Fig. 1). We have not previously recorded 100% EAB mortality in any bioassay with any of the insecticide products tested during the past three years.

**Larval density:** Larval density was assessed in late September by felling and debarking areas on the trunk and in the canopy of trees. We felled three blocks of trees at the 7-L site and four blocks of trees at the IS site (49 total trees) to estimate larval density in 2007. The remaining blocks of trees were left intact so that they can be re-treated and monitored through 2008.

At the 7-L site, we excavated at least 9-12 bark windows per tree on the 21 trees that were felled. Each bark window was  $\geq 500 \text{ cm}^2$  in area. At the IS site, we excavated at least 32 windows per tree on the 28 trees that were felled. All seven trees treated with emamectin benzoate, however, were completely debarked to quantify larval density on the trunk and branches  $> 6 \text{ cm}$  diam. Larval density, stage and viability were recorded and standardized per  $\text{m}^2$  of phloem.

Larval density varied considerably within and among treatments, as expected. Larval density on the untreated control trees at the IS site averaged 68 ( $\text{SE} \pm 33.3$ ) larvae per  $\text{m}^2$ . Average larval density on IS trees treated with either an imidacloprid product or dinotefuron ranged from 14 to 75 larvae per  $\text{m}^2$ . At the 7-L site, larval density on untreated controls averaged 132 ( $\pm 78.75$ ) larvae per  $\text{m}^2$ , while average larval density on trees treated with imidacloprid or dinotefuron ranged from 37 to 62 larvae per  $\text{m}^2$ .

The efficacy of the emamectin benzoate, however, was striking. When we completely debarked the seven emamectin benzoate trees, we exposed more than  $40 \text{ m}^2$  of phloem. We found a total of only 8 live larvae, equivalent to 0.19 larvae per  $\text{m}^2$ . There were no more than 3 live larvae on any of the trees and 2 of the trees had zero live larvae. Overall, emamectin benzoate provided  $> 99\%$  control of EAB, relative to untreated controls. We recovered a total of 81 dead EAB larvae on the seven trees, most of which were late instars. Results from the larval sampling, combined with the adult bioassay data, indicate that emamectin benzoate probably acts primarily on adult EAB and/or neonate larvae; otherwise we would have expected to find hundreds of dead late stage larvae on the trees. Moreover, because emamectin benzoate affected adult EAB and/or neonate larvae, the trees sustained little injury.

**Summary:** Although we have conducted research with various systemic insecticides since EAB was identified in 2002 (Cappaert et al. 2006, 2007; McCullough et al. 2005, 2006, 2007), we have never observed this level of control. We plan to continue and expand our research with emamectin benzoate to assess product persistence and related issues. In my opinion, however, our 2007 data indicate that the emamectin benzoate treatment provided a level of EAB control that is remarkably superior to that provided by any of the other products we have evaluated.

Given the results of our 2007 study, the wide distribution of EAB in lower Michigan and the potentially staggering impacts of EAB on urban ash trees, I believe that approval of a 24(c) registration for use of emamectin benzoate is justified. I expect that there will be considerable interest in using emamectin benzoate to treat ash trees in landscapes as soon as it becomes available. In addition, emamectin benzoate could potentially have a role in operational programs that may be implemented to slow the spread of EAB across the U.S.

I appreciate your attention and interest in this matter. If I can be of further assistance or provide more information, please let me know.

Sincerely,



Deborah G. McCullough  
Professor



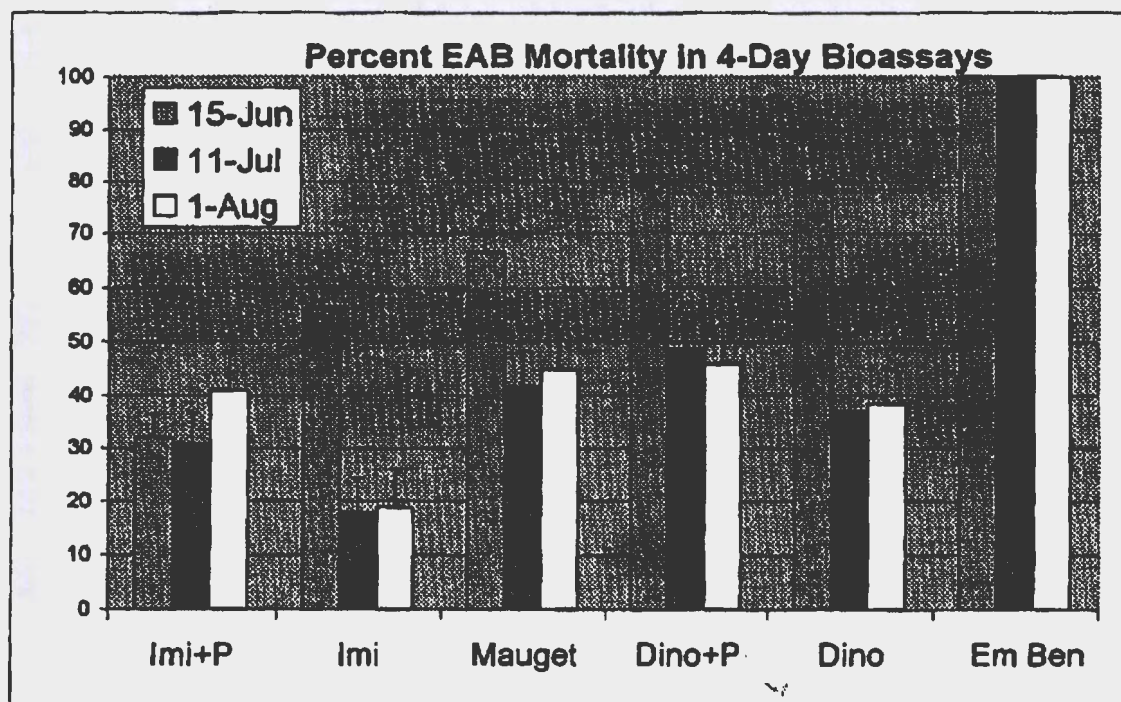
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**Table 1. Insecticide products and application methods evaluated in 2007.**

Product	Active ingredient (a.i.)	Application method	Date applied	Rate (g a.i./DBH inch)
Control	---	None	---	0
Imicide (10%)	imidacloprid	Mauget capsules; trunk injection	May 22	0.06
Macho 2F (21.4%)	imidacloprid	Trunk spray	May 4	1.70
Macho 2F + Pentra-Bark*	imidacloprid	Trunk spray	May 4	1.70
Safari (20%)	dinotefuron	Trunk spray	May 31	1.70
Safari + Pentra-Bark*	dinotefuron	Trunk spray	May 31	1.70
Emamectin benzoate	Emamectin benzoate	Arbor-jet micro-injector; Trunk injection	May 22	0.10 g for dbh $\leq$ 6.5" 0.15 for dbh 6.5-10" 0.20 for dbh $\geq$ 10"

\*3 oz Pentra-Bark per gallon



**Fig. 1. Average percentage mortality ( $\pm$  SE) (corrected to controls) of adult emerald ash borers caged with leaves from trees treated with insecticides in the 2007 study. N = 25 trees per treatment.**



**FEDERAL EXPRESS**

December 20, 2007

Document Processing Desk (APPL)  
Office of Pesticide Programs (7505P)  
U.S. Environmental Protection Agency  
Room S-4900, One Potomac Yard  
2777 S. Crystal Drive  
Arlington, VA 22202

**Attention: John Hebert, PM Team 4B**

**SUBJECT: APPLICATION FOR REGISTRATION OF NEW PRODUCT REQUIRING  
LIMITED DATA REVIEW WITHIN RD: TREEÄGE, EPA REG. NO. 100-XXXX**

Dear Mr. Hebert,

Enclosed please find the following information, which is being provided in support of a request for registration of a new non-food outdoor product containing emamectin benzoate:

- Receipt of PRIA II prepayment
- Application for Registration, EPA Form 8570-1
- Confidential Statement of Formula, EPA Form 8570-4
- Data matrices for active ingredient and end-use product
- Certification with Respect to Citation of Data, EPA Form 8570-34
- Three copies (3) each of a transmittal document and eight (8) data volumes containing product chemistry and acute toxicity data for the formulation
- Five (5) copies of draft product labeling and a (CD) with a pdf of the label
- Certification with Respect to Label Integrity form

This product is to be used only in tree-injection systems for control of wood-boring insect pests of various coniferous and deciduous tree species in forest and ornamental settings.

Because of the product's proposed use pattern as a tree injection, Syngenta asserts that environmental exposure to this active ingredient outside the treated tree will be minimal. Further, exposure to workers handling this product will be extremely limited given the delivery system, which does not possess much potential for significant human exposure. Studies have shown that emamectin benzoate, injected into the phloem of a tree, is able to maintain excellent efficacy for extended periods of time, with little or no chemical expected to leave the target tree(s). This unique combination of traits makes this compound and product ideal for control of wood-boring pests such as the Emerald Ash Borer, an economically significant pest, which is responsible for destruction of large tracts of Ash trees in Michigan and other Midwest states. Presently there is a federal government quarantine in effect because of the seriousness of the Emerald Ash Borer outbreak in the US.



Mr. Hebert  
December 20, 2007  
Page 2

Therefore, because of the unique characteristics of this compound and application technique, coupled with the near crisis situation with respect to the Emerald Ash Borer outbreak in the Midwest, Syngenta believes that there is a very significant and urgent need for such a product. Syngenta would be happy to present further information on the type of application/use of this product in a meeting sometime in late January 2008. Because the Agency reviewers and staff may find it useful for this meeting prior to the start of the formal review process, please contact me at (336) 632-7207 at your earliest convenience to arrange for such a discussion, and/or if there are any questions concerning the submission itself.

Since there are already outdoor use patterns registered for emamectin benzoate (Proclaim® and Denim®), and given the low exposure potential of the use being proposed, Syngenta suggests that the appropriate **PRIA II fee category for this action is proposed as a R-310**, with a fee of \$4,360 and a processing timeline of 6 months. Attached is the receipt of payment for this amount.

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Parshley".

Thomas J. Parshley  
NAFTA Senior Regulatory Product Manager  
Syngenta Regulatory Affairs

Enclosures





United States  
Environmental Protection Agency  
Washington, DC 20460

☒ Registration  
☐ Amendment  
☐ Other

OPP Identifier Number

### Application for Pesticide - Section I

1. Company/Product Number 100-XXXX	2. EPA Product Manager John Hebert	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Treeäge	PM# 4B	
5. Name and Address of Applicant (Include ZIP Code) Syngenta Crop Protection, Inc. P. O. Box 18300 Greensboro, NC 27419  <input type="checkbox"/> Check if this is a new address	6. Expedited Review. In accordance with FIFRA Section 3(c)(3) (b)(i), my product is similar or identical in composition and labeling to:  EPA Reg. No. _____ Product Name _____	

### Section - II

- ☐ Amendment - Explain below. ☐ Final printed labels in response to Agency letter dated \_\_\_\_\_
- ☐ Resubmission in response to Agency letter dated \_\_\_\_\_ ☐ "Me Too" Application.
- ☐ Notification - Explain below. ☒ Other - Explain below.

**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.)

Syngenta Crop Protection, Inc., herein submits an application for registration of a new product containing the active ingredient emamectin benzoate. This product is to be used only in tree-injection systems for control of wood-boring insect pests of various coniferous and deciduous tree species in forest and ornamental settings. Since there are already outdoor use patterns registered for emamectin benzoate (Proclaim® and Denim®), and given the low exposure potential of the use being proposed, Syngenta suggests that the appropriate PRIA II fee category for this action is proposed as a R-310, with a fee of \$4,360 and a processing timeline of 6 months.

### Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input checked="" type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Type of Container <input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
*Certification must be submitted	If "Yes" Unit Packaging wgt.	No. per Container	If "Yes" Unit Packaging wgt.
			No. per container
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container	4. Size(s) Retail Container 1 pint - 55 gallons	5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On Labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			

### Section - IV

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application.)			
Name Thomas Parshley	Title Regulatory Product Manager	Telephone No. (Include Area Code) 336-632-7207	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received (Stamped)
2. Signature <i>Thomas Parshley</i>	3. Title Regulatory Product Manager		
4. Typed Name Thomas Parshley	5. Date December 20, 2007		

**VOLUME 1 OF 9 OF SUBMISSION  
(TRANSMITTAL DOCUMENT)**

**1. Name and Address of Submitter**

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

**2. Regulatory Action in Support of which this Package is Submitted**

Application For Registration of New Product Requiring Limited Data Review Within  
RD: Treeäge, EPA Reg. No. 100-XXXX

**3. Transmittal Date**

12/20/2007

**4. List of Submitted Studies**

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
	1 OF 9	Transmittal document	NA
	2 OF 9	A16297A -Manufacturing Process Description and Supporting Data for Emamectin Benzoate ME (042.9) (A16297A); (PC-07-084), (09003aeb80273dda), (462236)	830.1550, 830.1600, 830.1650, 830.1670, 830.1750, 830.1800
	3 OF 9	A16297A -Physical and Chemical Properties of Emamectin Benzoate ME (042.9) (A16297A); (PC-07-085), (09003aeb80273dda), (462237)	830.6302, 830.6303, 830.6304, 830.6314, 830.6315, 830.6316, 830.6319, , 830.7000, 830.7100, 830.7300
	4 OF 9	Emamectin Benzoate ME (042.9) (A16297A) -Acute Oral Toxicity Up-and-Down Procedure in Rats; (T007407-06), (09003aeb80273dda), (462221)	870.1100



MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
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5 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Acute Dermal Toxicity in Rats; (T007408-06), (09003aeb80273dda), (462223)	870.1200
6 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Acute Inhalation Toxicity in Rats; (T007412-06), (09003aeb80273dda), (462231)	870.1300
7 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Primary Eye Irritation in Rabbits; (T007410-06), (09003aeb80273dda), (462227)	870.2400
8 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Primary Skin Irritation in Rabbits; (T007409-06), (09003aeb80273dda), (462225)	870.2500
9 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Dermal Sensitization Test - Buehler Method; (T007411-06), (09003aeb80273dda), (462229)	870.2600

COMPANY OFFICIAL:

THOMAS PARSHLEY  
(NAME)

Thomas Parshley  
(SIGNATURE)

COMPANY NAME:

SYNGENTA CROP PROTECTION, INC.

COMPANY CONTACT:

THOMAS PARSHLEY  
(NAME)

(336) 632-7207  
(PHONE)


## Certification with Respect to Label Integrity

Version: 9/11/02

I certify that the information (including, but not limited to, text, tables, and graphics) contained in the electronic file identified below by file name and submitted with this certification is the same information as that on the paper copies of these documents included with this submission.

PROPOSED LABEL		
EPA Registration #	Date Submitted to EPA	Electronic file name
100-xxxxx	December 20, 2007	000100-xxxxx.20071220.treeage.pdf

I certify that the statements that I have made on this form are true, accurate, and complete. I acknowledge that any knowingly false or misleading statements may be punishable by fine or imprisonment or both under applicable law.

  
Signature

December 20, 2007  
Date

Thomas J Parshley  
Name (typed)

Sr. Regulatory Product  
Manager  
Title

(Master label)

**TREE-äge™**

**Injected insecticide for the control for arthropod pest in trees**

Active Ingredient:

Emmamectin Benzoate<sup>1</sup> ..... 4.0%

Other Ingredients: ..... 96.0%

Total: ..... 100.0%

<sup>1</sup>CAS No.155569-91-8

**KEEP OUT OF REACH OF CHILDREN.**

**WARNING/AVISO**

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

See additional precautionary statements and directions for use on label[in booklet].

EPA Reg. No. 100-xxxxx

EPA Est. xxxxx

Product of xxxxx

Formulated in xxxxx

SCP xxxxxA-M(draft TREE-äge)

Net Contents

## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

#### WARNING/AVISO

Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear. Harmful if swallowed. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

FIRST AID	
If in eyes	<ul style="list-style-type: none"> <li>•Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>•Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>•Call a poison control center or doctor for treatment advice.</li> </ul>
If swallowed	<ul style="list-style-type: none"> <li>•Call poison control center or doctor immediately for treatment advice.</li> <li>•Have person sip glass of water if able to swallow.</li> <li>•Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>•Do not give anything by mouth to an unconscious person.</li> </ul>
<p style="text-align: center;"><b>NOTE TO PHYSICIAN</b></p> <p>Early signs of intoxication include dilation of pupils, muscular incoordination, and muscular tremors. Vomiting within one-half hour of exposure can minimize toxicity following accidental ingestion of the product; rapidly after exposure (&lt; 15 minutes) administer repeatedly medical charcoal in a large quantity of water or ipecac. If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parenteral fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms, and measurements. In severe cases, observations should continue for at least several days until clinical condition is stable and normal. Since emamectin benzoate is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic emamectin benzoate exposure.</p>	

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**HOT LINE NUMBER**

For 24-Hour Medical Emergency Assistance (Human or Animal),  
Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident)

Call

**1-800-888-8372**

**Personal Protective Equipment (PPE)**

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- shoes and socks
- protective eyewear

**Environmental Hazards**

This product is highly toxic to fish, mammals and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater. This product is highly toxic to bees exposed to direct treatment or residues on blooming trees.

**Physical or Chemical Hazards**

Do not use or store near heat or open flame.

---

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

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**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, Inc. or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.**

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.



## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

**IMPORTANT:** Read entire label before using this product. Failure to follow label instructions may result in poor control or tree injury. Failure to follow label directions may cause injury to people, animals and environment.

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### APPLICATION TO TREES

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TREE-äge is for control of mature and immature arthropod pests of trees, including, but not limited to, those growing in residential and commercial landscapes, parks, plantations, seed orchards, and forested sites (in private, municipal, state, tribal and national areas). TREE-äge contains the active ingredient emamectin benzoate and is formulated to translocate in the tree's vascular system when injected. To assure optimum effectiveness, this product must be placed into active sapwood.

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### GENERAL DIRECTIONS

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TREE-äge is designed for use with tree injection devices that meet the label and dose requirements [(for example, the Arborjet Tree Injection Systems)] for the control of listed pests of trees. Follow manufacturer's directions for equipment use.

Dosages are based on the Diameter (in inches) of the tree at Breast Height (DBH"). Breast height is a standardized distance of 54" from the ground. Often the diameter is determined from measuring the circumference of the tree at this height, and dividing circumference (in inches) by three (3). To determine DBH" for multi-stemmed woody ornamentals, measure the DBH" for each stem or branch and add together for the total DBH" per tree.

**Placement of Application/Injection Sites:** for optimum distribution, inject at the base of the tree. Inject into the stem within 12" of the soil, into the trunk flare or into tree roots exposing them by shallow excavation. Make applications into intact, healthy sapwood. Avoid injured areas or areas with decay. Select injection sites associated with stem growth.

**Number of Injection Sites:** Work around the tree, spacing injection sites approximately every 6.0 inches of tree's circumference.

**Drill Depth:** Drill through the bark then 5/8" to 1-5/8" (hardwoods) or 1-5/8" to 2" (conifers) into the sapwood with the appropriate sized drill bit. Use clean, sharp drill bits. Brad point bits are recommended. Precautions should be taken to avoid diseased areas and transferring infected tissues to other injection sites.

### **Resinous Conifers**

In resinous conifers, such as pine and spruce, start the injection immediately after drilling into the sapwood. A prolonged delay may reduce uptake on account of resin flow into opening.

### **WHEN TO TREAT**

TREE-äge contains the active ingredient emamectin benzoate which is a glycoside insecticide. It is active against immature and adult stages of arthropods. The primary route of toxicity is through ingestion, but may also be lethal upon contact.

**ENVIRONMENTAL CONDITIONS:** Uptake of TREE-äge is dependent upon the tree's transpiration. Transpiration is dependent on a number of abiotic and biotic factors, such as soil moisture, soil and ambient temperature, and time of day. For optimal uptake, apply when soil is moist, soil temperatures are above 45°F, ambient temperatures are between 40° to 90°F, and during the 24 hour period when transpiration is greatest, typically before 2:00 PM. Applications to drought or heat stressed trees may result in injury to tree tissue, poor treatment and subsequent control. Watering the trees prior to injection may enhance the uptake of TREE-äge.

**MONITOR TREE HEALTH and PEST INFESTATIONS:** Effective injection treatment is favored by a full canopy (i.e., leaves) and healthy vascular system. Once these tissues are compromised by arthropod damage (larval galleries, defoliation, leaf mining, etc.) an effective and uniform application of TREE-äge may be difficult to achieve and subsequent control may be poor. Optimally, treatment should be made preventively at least 2 to 3 weeks before arthropods historically infest the host tree. As a result of systemic movement and longevity of TREE-äge in trees, this interval may be extended much earlier to 6 months should tree dormancy, adverse weather, management, asynchronous life cycle of pests, etc., allow earlier application timing.

TREE-äge may also be effective as a curative treatment against some pests, such as those with slower development or if multiple life stages are susceptible to TREE-äge. Foliar pests may be controlled within 1- 2 weeks after treatment under ideal conditions. Pests that attack the stem and branches such as bark beetles and clearwing borers may disrupt vascular tissue resulting in poor distribution in an infested tree. This includes the initial larval stages of pests, such as bark beetles and clearwing borers, that attack the stem and branches, which may disrupt vascular tissue resulting in poor distribution of the product in an infested tree. However, control may be achieved if larvae come into contact or feed on TREE-äge treated tissues.

## USE

Use as formulated or dilute with equivalent 1 to 3 volumes of water or more, as necessary.

### USE RATE TABLE

Tree Diameter (DBH) (Inches)	Low ml./tree	Medium ml./tree	Medium - High ml./tree	High ml./tree	Average No. Injection Sites*
4 to 6	15	25	50	-	3
7 to 9	20	40	80	-	4
10 to 12	30	55	110	165	5
13 to 15	35	70	140	210	6
16 to 18	40	75	150	225	7
19 to 21	50	100	200	300	8
22 to 24	-	115	230	345	10
25 to 27	-	130	260	390	11
28 to 30	-	145	290	435	12
31 to 33	-	160	320	480	13
34 to 36	-	175	350	525	15
37 to 39	-	190	380	570	16
40 to 42	-	205	410	615	17
43 to 45	-	220	440	660	18
46 to 48	-	235	470	705	20
49 to 51	-	250	500	750	21
52 to 54	-	265	530	795	22
55 to 57	-	280	560	840	23
58 to 60	-	295	590	885	25
61 to 63	-	310	620	930	26
64 to 66	-	325	650	975	27
67 to 69	-	340	680	1020	28
70 to 72	-	355	710	1065	30

\* The number of injection sites listed is a guide for approximately how many are needed per size of tree.

For optimal control, it is recommended to be with  $\pm 1$  injection site of this number per tree. Higher rates tend to provide longer residual and control of more difficult to control insects. See **Target Pest** for additional information in choosing the amount of product to apply.

### Applications in Trees

Tree Tissue	Target Pest	Recommended Rate	Comments
Seed and Cone	Pine Cone Worm ( <i>Dioryctria</i> spp)	Medium to High	For optimal control apply in the fall for early season pests or at least 30 days before insect attack.
Bud and Leaf	Bagworm Fall Webworm Gypsy Moth Leafminers (including Diptera, Lepidoptera, Coleoptera, Hymenoptera) Orange-striped Oakworm	Low to High	For optimal control apply at least 2-3 weeks before economic threshold is predicted.
	<b>Mites:</b> Eryiophid mites European red mite Spruce spider mites Twospotted spider mite Sawfly Erythrina gall wasp	Low to High	
	<b>Tent Caterpillars</b> (including Eastern, Forest, Pacific, and Western) Western Spruce budworm Winter Moth	Low to Medium	
Shoot, Stem, Trunk and Branch	<b>Buprestid Borers</b> (Flathead borers including Emerald Ash Borer, Bronze birch borer, two-lined chestnut borer)	Low to High	For optimal control apply at least 30 days before historical egg hatch or adult flight and to trees whose vascular tissue is not damaged.  If vascular tissue is damaged or plugged by insect galleries, nematodes or fungi, uniform treatment and control may not be achieved.
	Clearwing borers Horntails	Low to Medium	
	<b>Longhorn borers-</b> (Roundhead borers including Asian, Eucalyptus, Pine Sawyer) Pine wood nematode Pales Weevil ( <i>Hylobius pales</i> ) <b>Scolytids (bark beetles)</b> <i>Ips</i> engraver beetles Mountain pine beetle Southern pine beetle Spruce beetle Western pine beetle White pine weevil	Medium to High	

## Compatibility

Do not mix TREE-äge before injection with other products such as insecticides, fungicides, plant growth regulators, surfactants, adjuvants, and fertilizers.

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## RESTRICTIONS

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- Do not apply to trees that may yield food consumed by humans or used in animal feed.
- Avoid treating trees that are moisture stressed or suffering from herbicide damage.

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## STORAGE AND DISPOSAL

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Do not contaminate water, food, or feed by storage and disposal.

### Pesticide Storage

Store in a cool, dry place, away from children and pets. Keep from freezing.

### Pesticide Disposal

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### Container Disposal

Triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by state and local authorities.

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TREE-äge is a registered trademark of Arborjet, Inc.

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For non-emergency (e.g., current product information), call  
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:  
Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, North Carolina 27419-8300  
[www.syngenta-us.com](http://www.syngenta-us.com)

SCP xxxxxA-M(draft TREE-äge)

TREE-age xxxxxA-M(draft)-lg-12-20-07 000100-xxxx.20071220.treeage.pdf





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

December 27, 2007

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

OPP Decision Number: D-387891  
EPA File Symbol or Registration Number: 100-RGNO  
Product Name: TREEAGE  
EPA Receipt Date: 21-Dec-2007  
EPA Company Number: 100  
Company Name: SYNGENTA CROP PROTECTION, INC.

G. THOMAS GALE, JR.  
SYNGENTA CROP PROTECTION, INC.  
ATTN: REGULATORY AFFAIRS  
PO Box 18300  
GREENSBORO, NC 27419-8300

SUBJECT: Receipt of Registration Application Subject to Registration Service Fee

Dear Registrant:

The Office of Pesticide Programs has received your application and certification of payment. If you submitted data with this application, the results of the PRN-86-5 screen will be communicated separately. During the administrative screen, the Office of Pesticide Programs has determined that this Action is subject to a Pesticide Registration Service Fee as defined in the Pesticide Registration Improvement Act.

The Action has been identified as Action Code: R310

NEW PRODUCT;NON-FAST TRACK (INCLUDES REVIEWS OF PRODUCT  
CHEMISTRY;ACUTE TOXICITY;PUBLIC HEALTH PEST EFFICACY);

No additional payment is due at this time.

If you have any questions, please contact the Pesticide Registration Service Fee  
Ombudsman at (703) 305-6249.

Sincerely,

*Teresa Downs*

Front End Processing Staff  
Information Technology & Resources Management Division

*RA*  
JAN 02 2008  
*OK*



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

December 31, 2007

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

SYNGENTA CROP PROTECTION, INC.  
PO Box 18300  
GREENSBORO, NC 27419-8300

Report of Analysis for Compliance with PR Notice 86-5

Thank you for your submittal of 21-DEC-07. Our staff has completed a preliminary analysis of the material. The results are provided as follows:

Your submittal was found to be in full compliance with the standards for submission of data contained in PR Notice 86-5. A copy of your bibliography is enclosed, annotated with Master Record ID's (MRIDs) assigned to each document submitted. Please use these numbers in all future references to these documents. Thank you for your cooperation. If you have any questions concerning this data submission, please raise them with the cognizant Product Manager, to whom the data have been released.

JAN 07 2008 PA  
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**VOLUME 1 OF 9 OF SUBMISSION  
(TRANSMITTAL DOCUMENT)**

**1. Name and Address of Submitter**

Syngenta Crop Protection, Inc.  
P.O. Box 18300  
Greensboro, NC 27419

**2. Regulatory Action in Support of which this Package is Submitted**

Application For Registration of New Product Requiring Limited Data Review Within  
RD: Treeäge, EPA Reg. No. 100-XXXX

**3. Transmittal Date**

12/20/2007

**4. List of Submitted Studies**

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
	1 OF 9	Transmittal document	NA
47309301	2 OF 9	A16297A -Manufacturing Process Description and Supporting Data for Enamectin Benzoate ME (042.9) (A16297A); (PC-07-084), (09003aeb80273dda), (462236)	830.1550, 830.1600, 830.1650, 830.1670, 830.1750, 830.1800
47309302	3 OF 9	A16297A -Physical and Chemical Properties of Enamectin Benzoate ME (042.9) (A16297A); (PC-07-085), (09003aeb80273dda), (462237)	830.6302, 830.6303, 830.6304, 830.6314, 830.6315, 830.6316, 830.6319, , 830.7000, 830.7100, 830.7300
47309303	4 OF 9	Enamectin Benzoate ME (042.9) (A16297A) -Acute Oral Toxicity Up-and-Down Procedure in Rats; (T007407-06), (09003aeb80273dda), (462221)	870.1100

MRID NUMBER	VOLUME NUMBER	STUDY TITLE	EPA GUIDELINE NUMBER
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<b>47309304</b>	5 OF 9	Emamectin Benzoate ME (042.9) (A16297A) -Acute Dermal Toxicity in Rats; (T007408-06), (09003aeb80273dda), (462223)	870.1200
<b>47309305</b>	6 OF 9	Emamectin Benzoate ME (042.9) (A16297A) -Acute Inhalation Toxicity in Rats; (T007412-06), (09003aeb80273dda), (462231)	870.1300
<b>47309306</b>	7 OF 9	Emamectin Benzoate ME (042.9) (A16297A) -Primary Eye Irritation in Rabbits; (T007410-06), (09003aeb80273dda), (462227)	870.2400
<b>47309307</b>	8 OF 9	Emamectin Benzoate ME (042.9) (A16297A) -Primary Skin Irritation in Rabbits; (T007409-06), (09003aeb80273dda), (462225)	870.2500
<b>47309308</b>	9 OF 9	Emamectin Benzoate ME (042.9) (A16297A) -Dermal Sensitization Test - Buehler Method; (T007411-06), (09003aeb80273dda), (462229)	870.2600

COMPANY OFFICIAL:

THOMAS PARSHLEY  
(NAME)

*Thomas Parshley*  
(SIGNATURE)

COMPANY NAME:

SYNGENTA CROP PROTECTION, INC.

COMPANY CONTACT:

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